REINFORCED CONCRETE DECK SLAB (8-21-00)

1.0 GENERAL

~~This Special Provision shall govern materials, forming and all other related work in the construction of a reinforced concrete deck slab in accordance with applicable parts of the Standard Specifications, the details shown on the plan, and as outlined in this Special Provision.~~

For prestressed girder spans, plans for the concrete deck slab are detailed for the use of a cast-in-place slab using either precast prestressed concrete panels or fabricated metal stay-in-place forms; however, the Contractor shall have the option of constructing a cast-in-place slab using removable forms. If noted on the plans, the Contractor also has the option to use metal stay-in-place forms in lieu of precast prestressed concrete panels. Any option chosen will be at no additional cost to the Department.

420-3(D)

For structural steel spans, plans for the concrete deck slab are detailed for the use of metal stay-in-place forms; however, the Contractor shall have the option of constructing a cast-in-place slab using removable forms. The precast prestressed concrete panels shall not be used on the structural steel spans.

2.0 DESIGN OF SLAB USING OPTIONAL FORMS

Changes in slab design to accommodate the use of optional forms shall be the responsibility of the Contractor and subject to review by the Engineer. Prior to using optional forms the Contractor shall submit two sets of prints of detailed checked plans of the system for review. The two sets of prints shall be accompanied with checked design calculations for the composite slab complying to the latest AASHTO Standard Specifications and Highway Design Branch Structure Design Manual. After the drawings have been reviewed and, if necessary, the corrections made, the Contractor shall submit reproducible drawings of the deck system to the Engineer to become the revised contract plans. The size of the sheets used for the drawings submitted shall be 22" x 34". The plans and design calculations shall be checked and sealed by a North Carolina Registered Professional Engineer.

420-3(D)

3.0 MATERIALS

~~Materials for metal stay-in-place forms shall be in accordance with the Special Provision for "Fabricated Metal Stay-In-Place Forms".~~

~~Materials for precast prestressed concrete panels shall be in accordance with Section 1078 of the Standard Specifications.~~

Unless otherwise noted on the plans, all cast-in-place concrete shall be Class AA conforming to the requirements of Section 1000 of the Standard Specifications.

420-15(A)

4.0 CONSTRUCTION METHODS

Unless otherwise shown on the plans, any one of the above forming systems used for a specific type of superstructure shall be used for all of the same type superstructure spans within the same bridge except the slab overhang from the exterior girder to the outside edge of superstructure shall be constructed using removable forms. 420-3(D)

~~Design and Construction requirements of the standard details and of the Items, "Concrete Structures", "Prestressed Concrete Members", "Reinforcing Steel" of the Standard Specifications and Special Provisions for "Fabricated Metal Stay-In-Place Forms", and "Prestressed Concrete Panels" shall govern for the particular method(s) of forming used. When pouring continuous bridge decks, pay special attention to the section on "Placing Concrete in Cold Weather" under the "Concrete Structures" item in the Standard Specifications.~~

No profile grade-line adjustment will be allowed for any of the forming types used, unless permitted by the Engineer. 420-15(A)

Curing methods for the concrete will conform to the Standard Specifications except as follows: 420-15(B)

The Membrane Curing Compound Method will not be allowed. Prior to the concrete reaching initial set, a curing medium consisting of burlap under polyethylene sheets or another material approved by the Engineer shall be placed on the deck and kept moist for a minimum of 7 curing days. The burlap or other approved curing medium shall be wet when placed on the deck. Water shall be applied to the curing medium through soaker hoses or another method approved by the Engineer. Water shall be applied in amounts to keep the medium moist but will not be allowed to flow or pond on the deck.

5.0 MEASUREMENT

Reinforced concrete deck slab(s) constructed under this item will be measured by the square foot of horizontal surface area using the nominal dimensions and configuration shown in the Layout Sketch for computing surface area as shown on the plans, transverse measurement being made out to out of slab including raised median and/or sidewalk sections. Diaphragms will be considered as a portion of the slab. When required by the plans, curtain walls, raised medians, sidewalks, pavement brackets, end posts, sign mounts, luminaire brackets and any other concrete appurtenances, expansion joint material, etc. will be considered a part of this item. Concrete Barrier Rail (including curved end blocks for the concrete barrier rail, when used) will be measured in accordance with the item under which it is furnished and will not be a part of this item. 420-21(E)

For structural steel spans, the quantities of concrete and reinforcing steel shown on the plans are based on a metal stay-in-place forming method. These quantities include amounts for 1 inch additional concrete due to the corrugation of the metal forms, concrete diaphragms and, when required by the plans, curtain walls, pavement brackets, end posts,

raised medians, sidewalks and other required attachments based on the profile grade and plan camber of the girders.

For prestressed concrete girder spans, the quantities of concrete and reinforcing steel shown on the plans are based on the forming method detailed on the plans. These quantities include concrete diaphragms, and, when required by the plans, curtain walls, pavement brackets, end posts, raised medians, sidewalks, and other required attachments based on the profile grade and plan camber of girders. The quantities also include either cast-in-place slab concrete when the plans are detailed for the prestressed concrete panel forming method or amounts for 1 inch additional concrete due to the corrugation of the metal forms when the plans are detailed for the fabricated metal stay-in-place form forming method and based on the profile grade and plan camber of the girders.

No measurement will be made for concrete or reinforcing steel due to a variation in camber of the girders from the plan camber or for additional quantities required by optional methods of forming.

6.0 BASIS OF PAYMENT

The quantity for which payment is made will be that quantity shown in square feet on the plans. ~~Where the plans have been revised, the quantity for be paid for will be the quantity shown on the revised plans.~~ 420-21(E)

~~The unit bid per square foot will be full compensation for all work covered by this Special Provision and applicable parts of the Standard Specifications, but not limited to furnishing and placing concrete,~~ reinforcing steel, ~~joint filler and sealer, curing, deck drains~~, bridge scuppers, ~~and any other material; erecting and removing all falsework and forms~~ including any appurtenances required by the Engineer to stabilize exterior girders during overhang construction; ~~protecting concrete in wind, rain, low humidity, high temperatures or other unfavorable weather; constructing joints, constructing drains and scuppers, finishing concrete and curing concrete.~~ 420-1

~~Payment will be made under:~~

420-22

Reinforced Concrete Deck Slab	Square Foot